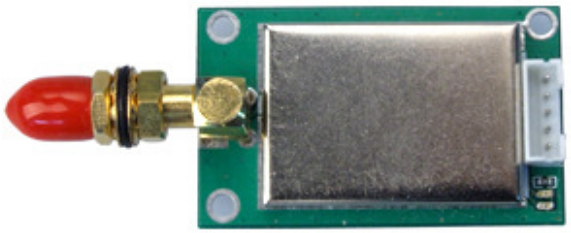
JZ863 Mini Power Wireless Module

User's Manual



Before using the product, please carefully read the user's manual.

About JZ863

JZ863, the mini power wireless module, is used as the wireless data transmission in short distance. With the small size, weight and power consumption and good stability and reliability, it has the function of bidirectional data sign transmission, test and control. It is used for Wireless meter reading, such as water meter, electric meter and gas meter, parking meter, intellective card, electronic weighing apparatus, meter for checking on work attendance, queue wireless meter, building control, shipping company control, alarm system, intelligent equipment, Automatic data collecting system; Industrial remote control and remote test building automation, safety and security, powerhouse equipment wireless monitor, entrance control system, etc. It provide the USB power interface to be convenient for the mini computer and PC users if necessary.

JZ863 Feature

1. Ultra low power transmission

transmission power is 10-11mW, high receiving sensitivity: -110dbm , size: 44mmX27mmX8mm.

2. Low power consumption

Receiving current<11mA，transmission current<100mA，sleeping current <1uA.

3. ISM frequency band, not requiring on application of frequency point

Carrier frequency of 433MHz，also capable of providing 315/868/915MHz carrier frequency.

4. High ani-interference and low BER (Bit error Rate)

Based on the FSK modulation mode, it adopts the efficient communication protocol. The actual bit error rate of 10-5 ~ 10-6 can be achieved when channel bit error rate is 10-2.

5. Long transmission distance

Within the range of visibility, the reliable transmission distance is（BER=10-3/1200bps）>500m when the antenna height is greater than 200m (BER=10-3/9600bps).

6. Transparent data transmission

Transparent data interface is offered to suit any standard or nonstandard user protocol. Any false data generated in the air can be filtrated automatically (What has been received is exactly what has been transmitted). The charge time for receiving and sending <10ms.

7. Multi-channel and speed

The JZ863 configuration provides 46 channels. to meet the multiple communication combination mode of the users. It has baud rate to be chosen such as 1200bps、2400bps、4800bps、9600bps、19200bps. The wireless transmission rate is direct ratio with baud rate of interface to meet user's

equipment requirement. The rf baud rate is 1200bps、2400bps.

8. High speed wireless communication and Large data buffer

When the speed rate in the air is quicker than interface's, allowing to transmit unlimited length data at one time, when the speed rate is slower or equal the interface's, allowing the transmission of 255 Bytes long data frames at one time for more flexible programming by users.

9. Intelligent data control and the user doesn't need to prepare excessive programs

Even for semi duplex communication, the user doesn't need to prepare excessive programs, only receiving/transmitting the data from the interface. JZ863 will automatically complete the other operations, such as transmission/receiving conversion in the air, control, etc.

10. High reliability, small and light

Single chip radio- frequency integrated circuit and single chip MCU are used for lessened peripheral circuits, high reliability, and low failure rate.

11. Watchdog monitor

Watchdog monitors the inner function, so that change the traditional product structure and improve the product reliability.

12. antenna choose

Users can choose various antenna setting project and antenna according to user's different need to achieve a optimal effect.

Application of JZ863

1、Measure

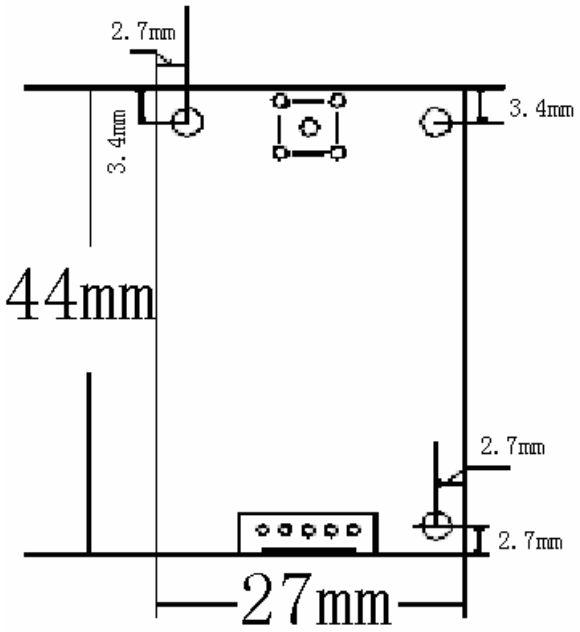
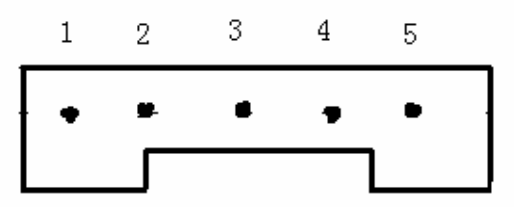


Fig1. JZ863 interface chart



Remarks: Jack space between is 2.0 mm.

JZ863 interface definition:

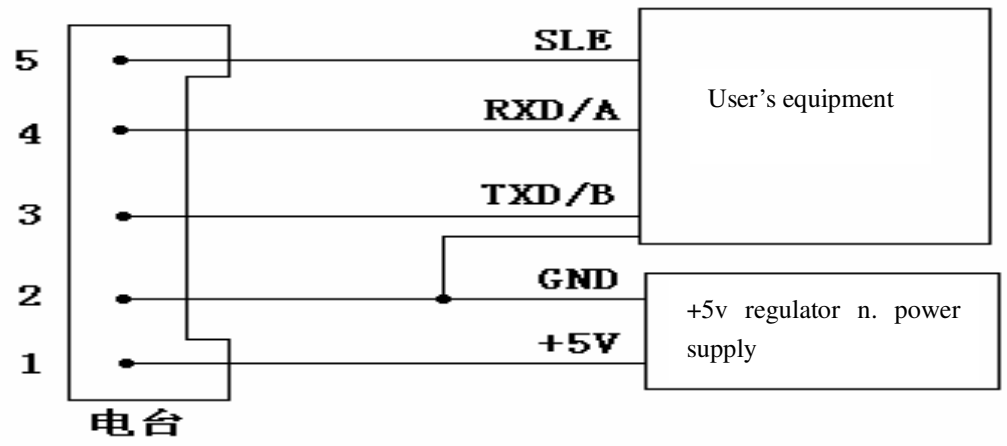
1）User's interface

JZ863 can supply one 5-pin connector (JP1), and its definitions as well as connection method for terminals are shown in Table 1.

Table 1: Definition of connecting pins and connection method

Item no	PIN	Description Level Connected to the terminal	User terminal	Remarks
1	VCC	+5 ± 0.5V	+5 ± 0.5V	TTL 3V user's choose
2	GND	Power supply/Ground	DGND/AGND	
3	RXD/ B (RS-485)	Serial data receiving end	TXD/ B (RS-485)	
4	TXD/ A (RS-485)	Serial data transmitting end	RXD/ A (RS-485)	
5	SLE	Sleep control (input) end		High level to sleep, Low level awake

Note: The Pin 5 of no-sleeping version is not be used, pin 5 must be hung.



transmitter-receiver

Remarks: To avoid to connect the interface reversely and can not communicate, please check and assure the voltage of 3 and 4 pin is existing by using multimeter. If there is one pin that has the voltage, another has not voltage, which means the interface is connected reversely, pls. Change the connection wires between pin 3 and 4.

2) Power supply

JZ863 uses DC power supply with voltage of +5V. It can also share power supply with other equipment, however, the high quality power supply with desirable ripple factor should be selected. In addition, the reliable grounding must be used if there is other device in the system equipment. In case of failure to connect with the earth, it can form its own grounding ,but it must be absolutely separated from the municipal electric supply.

3) Sleeping function

JZ863 had sleeping and no-sleeping version. The current of JZ863 in the sleeping state is 2Ua. Users must tell which version will be chosen before place the order in advance. For sleeping version, users can open and close the sleeping function by themselves. JZ863 with the sleeping function has two awakening way, one is hardware awakening way, another is interface awakening way(air awakening will be reserved) Hardware awakening is achieved by the Pin 5 input to the high level and input low level to awake. Interface awakening is achieved by users send designate protocol data by JZ863 interface to open or awake. JZ863 with the function of sleeping is default in close state before leaving factory, so users must set by JZ863 software to set the awakening mode to hardware awakening or interface awakening. Users can also tell us to set in advance.

If users use JZ863 with the sleeping function, but hope not to apply the sleeping function, the users can set by JZ863 software to set for no-sleeping state or make JZ863 pin 5 to connect the ground in the mode of hardware awaken.

JZ863 parameters setting

JZ863 have one interface of TTL、RS232、RS485, You must specify the interface when you buy. JZ863 main parameters: COM baud rate and verify，RF baud rate, Channel and frequency。You can change these parameters by our RF Module soft. When RF baud rate is faster than COM baud rate，One frame Can transmit limitless data. When RF baud rate is not faster than COM baud rate ，One frame Can transmit 255 bytes most. You can set the rate according your need. The general Power supply is 5V DC.

Two JZ863 communication must have condition as follow:

1. Their channels(i.e. frequency) is same.
2. Their RF rates is same.
3. RF Module Com baud rate and verify is agree with its equipment or PC that it connects with.

parameters default value:

Channel: 1

Interface speed rate: 9600BPS

Interface verify: none

Speed rate in air: 2400BPS

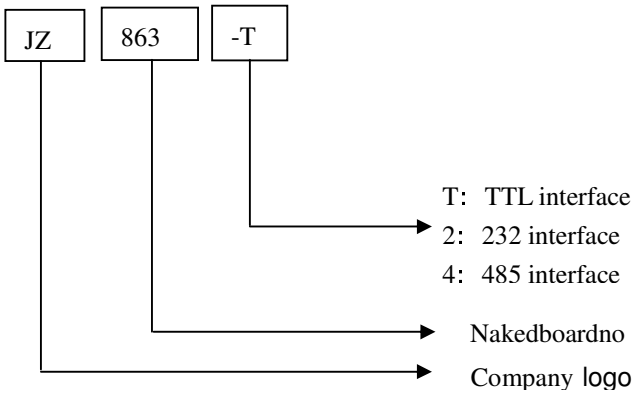
Channel and frequency list

Ch No.	Frequency	Ch No.	Frequency	Ch No.	Frequency	Ch No.	Frequency
1	424.7000MHZ	13	424.8500MHZ	25	447.3000	37	447.4500
2	424.7125MHZ	14	424.8625MHZ	26	447.3125	38	447.4625
3	424.7250MHZ	15	424.8750MHZ	27	447.3250	39	447.4750
4	424.7375MHZ	16	4424.8875MHZ	28	447.3375	40	447.4875
5	424.7500	17	424.9000	29	447.3500	41	447.5000
6	424.7625	18	424.9125	30	447.3625	42	447.5125
7	424.7750	19	424.9250	31	447.3750	43	447.5250
8	424.7875	20	424.9375	32	447.3875	44	447.5375
9	424.8000	21	424.9500	33	447.4000	45	447.5500
10	424.8125	22	447.2625	34	447.4125	46	447.5625
11	424.8250	23	447.2750	35	447.4250		
12	424.8375	24	447.2875	36	447.4375		

Technical specification of **JZ863**

Modulation mode: FSK
Working frequency: 433MHZ
Transmission power: <100mW
Receiving sensitivity: -110dBm
Transmitting current:: <100mA,
Receiving current: <11mA
Sleeping current: <1uA
Channel speed rate: 1200/2400/4800/9600/19200Bit/s User can Choose one
Interface speed rate: 1200/2400/4800/9600/19200Bit/s User can Choose one
Change time for receiving and sending: <10ms
Interface data format: 8E1/8N1/8O1
Power supply: 5 ± 0.5V(RS232/RS485), 2.8--3.6V or 3.6--5.5V(TTL) DC
Working temperature: -20℃—65℃
Working humidity: 10%—90% relative humidity without condensation
Dimension: 44mmX27mmX8mm (not include antenna)
Attachable Communication with Model: JZ862/JZ863/JZ864/JZ865/JZ866/JZ868

Model and name



Optional Antenna:

Trouble and solve ways:

NO.	Trouble	Trouble causes and solve ways
1	No shine of Indicator light	a、Power Line badness touch . b、Power is bad. c、Power line meet in reverse, or diode of polarity protect is bad.
2	No transmit or No receive	a、Radio is badness touch with PC/terminal. b、Radio with TTL/RS232/RS485 not match terminal. c、RX frequency and TX frequency is not same.
3	Bit error rate High	a、antenna not match, or touch bad; b、RF baud rate is not right. c、Power supply ripple is too great.
4	Indicator light twinkling	a、Electromagnetism disturb in circumstance. b、Same frequency disturb in the circumstance.